## CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1. A method for designing, deploying or optimizing a communications network, comprising the steps of:

generating a computerized model of a space, said space having a plurality of different objects therein each of which have attributes which impact performance of a communications network;

establishing a desired performance metric for at least one selected location within said space;

modeling performance attributes of a plurality of different components which may be used in said communications network;

specifying components from said plurality of different components to be used in said communications network

specifying locations within said space for a plurality of different components in said computerized model;

predicting a predicted performance metric for said at least one selected location within said space based on said selected components and said selected locations; and

comparing said predicted performance metric to said desired performance metric.

2. The method of claim 1 wherein said steps of specifying components and specifying locations is performed automatically multiple times until a desired comparison is obtained in said comparing step.

3. The method of claim 1 further comprising the step of specifying

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a configuration for said selected components.

4. The method of claim 3 wherein said step of specifying a configuration includes the step of defining an orientation of said selected component in said space at said selected location.

5. The method of claim 3 wherein said steps of specifying components, specifying locations, and specifying a configuration are performed automatically multiple times until a desired comparison is obtained in said comparing step.

6. The method of claim 1 wherein at least some of said components specified in said specifying step are wireless communication components.

7. The method of claim 6 wherein the wireless communication components are antennas.

8. The method of claim 1 wherein said desired performance metric and said predicted performance metric are selected from the group consisting of received signal strength intensity, throughput, bandwidth, quality of service, bit error rate, packet error rate, frame error rate, dropped packet rate, packet latency, round trip time, propagation delay, transmission delay, processing delay, queuing delay, capacity, packet jitter, bandwidth delay product, handoff delay time, signal-to-interference ration, signal-to-noise ratio, physical equipment price, maintenance requirements, depreciation and installation cost.

9. The method of claim 1 wherein said computerized model of said space is three dimensional.

10. The method of claim 1 wherein said step of selecting locations is performed with a graphical interface.

11. The method of claim 1 wherein said step of specifying locations is performed by specifying a location attribute for said selected components.

12. An apparatus for designing, deploying or optimizing a communications network, comprising:

    means for generating a computerized model of a space, said space having a plurality of different objects therein each of which have attributes which impact performance of a communications network;

    means for establishing a desired performance metric for at least one selected location within said space;

    computerized models of performance attributes of a plurality of different components which may be used in said communications network;

    means for specifying components from said plurality of different components to be used in said communications network

    means for specifying locations within said space for a plurality of different components in said computerized model;

    means for predicting a predicted performance metric for said at least one selected location within said space based on said selected components and said selected locations; and

    means for comparing said predicted performance metric to said desired performance metric.

13. The apparatus of claim 12 further comprising means for specifying a configuration for said selected components.

14.  The apparatus of claim 13 wherein said means for specifying a configuration defines an orientation of a specified component in said space at a selected location.

15.  The apparatus of claim 1 wherein at least some of said components are wireless communication components.

16.  The apparatus of claim 15 wherein the wireless communication components are antennas.

17.  The apparatus of claim 12 wherein said desired performance metric and said predicted performance metric are selected from the group consisting of received signal strength intensity, throughput, bandwidth, quality of service, bit error rate, packet error rate, frame error rate, dropped packet rate, packet latency, round trip time, propagation delay, transmission delay, processing delay, queuing delay, capacity, packet jitter, bandwidth delay product, handoff delay time, signal-to-interference ration, signal-to-noise ratio, physical equipment price, depreciation, maintenance requirements and installation cost.

18.  The apparatus of claim 12 wherein said computerized model of said space is three dimensional.